The Emotional Stress Reaction Questionnaire (ESRQ): Measurement of Stress Reaction Level in Field Conditions in 60 Seconds

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ABSTRACT

The Emotional Stress Reaction Questionnaire (ESRQ) maps the emotional reaction of an individual in approximately 60 seconds. It consists of 14 emotion words designed to measure the following primary appraisal categories: Irrelevant, Benign-positive, Challenge, and Threat, harm or loss. The aim was to explore the relationships between the ESRQ and: (1) antecedents conditions such as personality; (2) secondary appraisal; (3) coping processes; and (4) various outcome indices such as performance. Data were collected in five Swedish samples (two civilian and three military, total N = 1334). A consistent correlational pattern was found. Thus, the Benign-positive and Challenge scales correlated positively with favourable scores on Extraversion, Emotional Stability, sense of coherence, positive forms of cognitive emotion-focused coping, self-rated performance, self-rated health and low amount of moral stress. The opposite pattern was found on the Threat, harm or loss scale and, to a lesser degree, the Irrelevant scale. A positive - negative emotions balance scale showed the most clear-cut correlations and had the highest reliability. In addition to a theoretical and methodological discussion, comments on the practical applicability of the ESRQ in field conditions are given.

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The Emotional Stress Reaction Questionnaire (ESRQ) maps the emotional reaction of an individual in approximately 60 seconds. It consists of 14 emotion words designed to measure the following primary appraisal categories: Irrelevant, Benign-positive, Challenge, and Threat, harm or loss. The aim was to explore the relationships between the ESRQ and: (1) antecedents conditions such as personality; (2) secondary appraisal; (3) coping processes; and (4) various outcome indices such as performance. Data were collected in five Swedish samples (two civilian and three military, total N = 1334). A consistent correlational pattern was found. Thus, the Benign-positive and Challenge scales correlated positively with favourable scores on Extraversion, Emotional Stability, sense of coherence, positive forms of cognitive emotion-focused coping, self-rated performance, self-rated health and low amount of moral stress. The opposite pattern was found on the Threat, harm or loss scale and, to a lesser degree, the Irrelevant scale. A positive - negative emotions balance scale showed the most clear-cut correlations and had the highest reliability. In addition to a theoretical and methodological discussion, comments on the practical applicability of the ESRQ in field conditions are given.

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1.0   INTRODUCTION

The truth is in the eye of the beholder is one of the evergreens of psychological theory. It implies that the way we cognitively appraise and create meaning in a given situation, affects other psychological processes such as emotions and coping. Following from this, the appraisal process may also have an impact on various outcomes such as performance, health, etc (Lazarus, 1991, 1999).

The present study draws heavily on the theoretical framework developed by the late Richard Lazarus (1966, 1991, 1999; Lazarus & Folkman, 1984). Basically, he presents two appraisal processes: primary and secondary appraisal. The first involves an evaluation of stakes or threats in a given situation; "Am I OK or in trouble?" The second consists of an evaluation of coping options; "What can I do?" Both processes occur simultaneously at multiple levels of consciousness, partly in milliseconds, partly with long deliberation.

Considering the great importance ascribed to appraisal processes, surprisingly little has been done when it comes to the development of psychological assessment procedures (Lazarus, 1991, 1999). Narrowing down the focus, this paper intends to cover the primary appraisal process. A problem here is that it is generally difficult for an individual to verbalize how he/she cognitively appraises stakes/threats in a given situation, in parts of seconds at conscious and preconscious levels. However, leaning on Lazarus once more, it is argued that the primary appraisal process can be measured indirectly by mapping how an individual feels in a given situation. The logic, according to Lazarus and Folkman (1984), is that our emotions reflect the preceding cognitive appraisal process. Drawing on this idea, Larsson (1987) developed the Emotional Stress Reaction Questionnaire (ESRQ). The instrument was further developed using structural equation modelling (SEM) by Larsson and Wilde Larsson (2010).

The ESRQ questionnaire consists of 14 emotion words (see the Method section) designed to reflect the main primary appraisal categories presented by Lazarus and Folkman (1984): irrelevant, benign-positive, challenge, and threat, harm or loss. The ESRQ was developed with the intention to be used in performance situations such as military operations, stressful police or rescue service missions, and athletic competitions. After a practice session, it can be answered in about 60 seconds. It gives an instant "snapshot" of the respondent's psychological stress level in a given situation (see e.g. Larsson, 1989, 1990).

The ESRQ was designed with the intention that it should be possible to respond to it quickly (about one minute) in almost any kind of situation where one can divert one's attention to the questionnaire for this amount of time. Alternatively, it can be used retrospectively. In that case the individual is asked to respond according to how he/she felt then (in a given situation). Thus, it can easily be used in groups such as the military, civilian first responders, athletes, etc.

Following the increased stress level in modern multinational military missions characterized by irregular warfare (see e.g. Bartone, Pastel, & Vaitkus, 2010), there is an accompanying need for easy-to-use stress measurement scales. The ESRQ could possibly fill such needs but this has not been adequately shown yet. Previous studies with the instrument has focused on performance (Larsson, 1989, 1990; Larsson, Kempe, & Starrin, 1988) and, in a health care context, patient satisfaction (Larsson & Wilde Larsson, 2010). Several other relationships have been left unresearched. Therefore, the aim was to explore the relationships between primary appraisal processes as measured by the ESRQ and: (1) antecedent conditions such as personality; (2) secondary appraisal and coping processes; and (3) various outcome indices.

2.0 METHOD

2.1 Participants and Procedure

The study population consists of five different samples that are presented in Table 1. In each case the ESRQ was part of a longer questionnaire, but no attempt was made before to specifically analyze the ESRQ responses. All participants are Swedish.

Table 1: Summary of Study Samples and Scales Used in Addition to the ESRQ

Sample	n	Additional scales	Source
Civilian first responders (ambulance, police, rescue service) (assessments related to the What-is-this-phase and the Gain-control-phase)	386	Secondary appraisal Cognitive coping Self-rated performance	Sjöberg, Wallenius, & Larsson (in press)
Civilian out-clinic patients	624	Personality Self-rated health	Larsson & Wilde Larsson (2010)
Military task force on peace enforcement mission in Tchad, 2008 (officers and soldiers) (assessment after deployment)	84	Secondary appraisal Self-rated performance	Unpublished
Military task force on peace enforcement mission in the Bay of Aden, 2009 (officers and sailors) (assessment before and after deployment)	128	Sense of coherence	Unpublished
Military (cadets) during stressful exercise at a military academy (assessments at three episodes during the exercise)	112	Secondary appraisal Self-rated performance Moral stress reaction	Unpublished
Total	1334		

Sample No. 1 (Sjöberg, Wallenius, & Larsson, in press) consists of 386 civilian first responders comprising 33% ambulance personnel, 23% police officers and 43% from the rescue services. The whole sample was made up of 340 men and 46 women. The mode age group was 41-50 years. They were asked to report their reactions in a complex and highly stressful rescue operation. Following Fredholm's (1999) suggestion, participants retrospectively reported their experience related to two time segments. One was called the What-is-this-phase, covering the time from the alarm to the point where the respondent knew what the incident was about. The second was called the Gain-control-phase. This is the following phase and is characterized by the respondent experiencing that he or she could control the event.

Sample No. 2 (Larsson & Wilde Larsson, 2010) consists of 624 patients visiting a Swedish primary health care center. In this group, 295 were men and 329 were women. The mean age was 48.9 years ($SD = 19.8$). They responded on a touch screen computer before leaving the health care center and were asked to report how they felt during the visit.

Sample No. 3 to 5 were military groups (reported in popular Swedish reports). The third sample consisted of 84 participants from a Swedish peace enforcement force that had just returned from a 6-month mission in Tchad. The sample was made up of 78 men and 6 women, with a mean age of 28.4 years (SD = 6.7). They were asked to recall the most stressful situation they had experienced during the mission and relate their responses to this.

The fourth sample consisted of 128 participants from a Swedish marine force that had just returned from a 6-month mission in the Bay of Aden, with the task of protecting ships from pirates. The group consisted of 119 men and 8 women, with a mean age of 30.8 years (SD = 10.2). They were given the same instruction as the one described above for the Tchad sample.

The fifth and final sample consisted of 112 military cadets attending the three-year basic officer education at the Swedish National Defence College. The group consisted of 101 men and 11 women, with a mean age of 23.7 years (SD = 2.11). During a stressful two-day exercise they were faced with three demanding tasks, and filled in the questionnaire immediately after each episode. The episodes involved breaking through barriers put up by terrorists who controlled a village (I), using armed violence to free persons taken as hostages (II), and handling the aftermath of an Improvised Explosive Device (IED) attack where a colleague was severely wounded (III).

2.2 Measures

2.2.1 Primary appraisal.

The ESRQ, which was used in all nine measurements across the five samples, consists of the following 14 emotion words designed to measure the different cognitive appraisal categories as follows: Irrelevant: indifferent; Benign-Positive: relaxed, pleased, and glad; Challenge: alert, focused, concentrated, and energetic; and Harm, threat, or loss: concerned, uncertain, disappointed, heated, mad, and angry (Larsson, 1987; Larsson & Wilde Larsson, 2010). The questionnaire including its instruction is presented in Appendix A.

The response format for all 14 items is 4-point Likert scale. Scoring of the ESRQ consists of summing the raw scores on items representing each kind of cognitive appraisal and dividing that total by the number of items in the category.

A total ESRQ score, labelled Positive - negative balance, is computed as follows. A positive emotion sum score is computed by adding the raw scores of the seven items reflecting Benign-positive and Challenge appraisals respectively. A negative emotion sum score is computed by adding the raw scores of the six items reflecting the appraisal/superior emotion category Threat, harm and/or loss plus the single item measuring Irrelevant. Finally, the negative emotion score is subtracted from the positive emotion score. The resulting measure can range from -21 (maximum dominance of negative emotions) to 21 (maximum dominance or positive emotions). Cronbach alpha coefficients on the various ESRQ scales ranged in the total of nine times it was used across the five studied samples as follows: Benign-positive scale: 0.57-0.80, Challenge scale: 0.55 – 0.89, Threat, harm or loss scale: 0.64-0.83, the positive items in the Positive - negative balance scales: 0.74-0.90, and the negative items in the Positive - negative balance scale: 0.65-0.84. Altogether, three out of 45 coefficients were below 0.60 and they were all found in the marine task force sample.

2.2.2 Personality.
Data were collected (civilian out-clinic sample) using the Single-Item Measures of Personality (SIMP) (Woods & Hampson, 2005) designed to measure the five dimensions/factors in the Big Five model of personality (Costa & McCrae, 1992): Extraversion, Agreeableness, Emotional Stability, Conscientiousness, and Openness. Each factor/item is measured on a bipolar nine-point graded line.

2.2.3 Sense of coherence (SOC) was assessed (military task force Aden Bay sample) with Antonovsky's (1987) short 13-item version. Scores on each item could range from 1 (weak SOC) to 7 (strong SOC). A scale score was calculated by summing the raw scores. The Cronbach alpha coefficients were 0.78 both before and after deployment.

2.2.4 Secondary appraisal was assessed with the following single item scale: The situation could be reasonably solved with the available resources. A 5-point response scale from 1 (Do not agree at all) to 5 (Fully agree) was used. Responses were obtained twice from the sample of civilian first responders (related to the What-is-this-phase and the Gain-control-phase respectively), once from the military task force in Tchad (self-selected stressful situation) and three times from the military cadet sample (one for each at the three episodes).

2.2.5 Cognitive emotion-focused coping. This was assessed twice in the sample consisting of civilian first responders (What-is-this-phase and Gain-control-phase) using the Self-Statement Questionnaire (SSQ) developed by Larsson (1989). The SSQ contains 36 items designed to measure the inner talk of the respondent immediately prior to a task, at the very onset of the task, and during the task. In the present case, the two first-mentioned time segments were combined in the What-is-this-phase assessment. There are four scales as follows within each time segment: Positive self-talk vs. fear (e.g. Relax now and breath calmly); Positive self-talk vs. anger (eg. Remember, focus on the task and don't take it personal); Negative self-talk vs. fear (e.g. I will never manage this); and Negative self-talk vs. anger (e.g. What a stupid task). The responses were entered on a 5-point scale ranging from 1 (Not used) to 5 (Used a great deal). The instructions were: "Please read each item below and indicate, by circling the appropriate category, to what extent you used it (during the given time segment). Indices were formed by adding the raw scores of each scale and dividing the sum by the number of items in the scale. Cronbach alpha coefficients ranged between 0.66 and 0.89 in the present sample.

2.2.6 Performance was measured in the civilian first responder sample by an index formed by adding the raw scores on three items (e.g. I am proud of my performance in the operation) with 5-point response scales (ranging from 1 = Do not agree at all to 5 = Fully agree). In the military task force serving in Tchad, and in the military cadet sample, performance was measured by a single-item. Participants made self-ratings of their performance in the stressful episode on a scale ranging from 0% to 100%. The instructions were: "Think about the situation again. Consider how well you could have handled it if you had been "on top of your ability," that is, if you had acted like you can in your best moments. Let us call this hypothetical ideal performance 100%. Mark a circle on the scale below how close to this ideal behaviour you think you acted in reality." Every tenth per cent was marked (0%, 10%, 20%, etc) making it an 11-pont scale in the analysis.

2.2.7 Subjective health condition. Patients in the civilian out-clinic sample gave self-ratings of their health condition in their response to a single question: "How would you describe your present health condition?" using a five-point scale ranging from 1 (Very poor) to 5 (Very good).

2.2.8 Moral stress reaction was measured in the military cadet sample by the sum score of the four negative ambiguous states identified by Nilsson et al. (2011): Insufficiency, Powerlessness, Meaninglessness and Frustration. The same response scale as in the ESRQ (see above) was used and the sum score was divided by four to make it comparable to the ESRQ indices. Cronbach alphas ranged from 0.67 to 0.72 on the three episode assessments.

2.3 Statistics

The main results presentation is based on correlations (Pearson) between the ESRQ scales on the one hand, and the scales designed to measure antecedent conditions, secondary appraisal, cognitive emotion-focused coping, and outcome indices on the other. In addition to this, explorative factor analyses (principal

axis factoring with oblique rotation) were performed on the ESRQ items within each sample (not shown).

3.0   RESULTS

The dimensionality of the ESRQ items was analyzed in detail in the aforementioned study by Larsson and Wilde Larsson (2010) using SEM and the question of factor structure was not the main aim of the present study. In summary, explorative factor analyses (principal axis factoring with oblique rotation) in each of the samples, typically resulted in three-factor solutions. One factor contained the items designed to measure the appraisal category Benign-positive. Items intended to reflect the appraisal Challenge loaded high in a second factor. Finally, all items measuring the appraisal Threat, harm or loss were found in a third factor. The correlation between the two first-mentioned factors was usually strong and positive, and they both correlated negatively with the third factor. The item designed to measure the appraisal category Irrelevant (indifferent) usually had low loadings in all factors, although somewhat higher in the Threat, harm or loss factor.

3.1 Relationship with Antecedents

Personality, as well as sense of coherence (Antonovsky, 1987), can be regarded as antecedents of primary appraisal processes (Lazarus & Folkman, 1984).   Available correlation data with indices of these constructs are shown in Table 2.

Table 2: Correlations between the ESRQ Scales and Antecedent Variables

Sample: Civilian out-clinic patients ($n = 624$)

| ESRQ scales | Personality[1] | | | | |
	Extraversion	Agreeable-ness	Emotional stability	Conscien-tiousness	Openness
Irrelevant[2]	-0.07	-0.05	-0.02	-0.03	-0.00
Benign-positive[2]	0.11**	0.02	0.26***	0.00	0.07
Challenge[2]	0.17***	-0.03	0.23***	0.09*	0.04
Threat, harm or loss[2]	-0.15***	-0.04	-0.11**	-0.09*	-0.01
Positive-negative balance[3]	0.18***	0.02	0.24***	0.08*	0.04

Sample: Military task force   Bay of Aden   ($n = 128$)

| ESRQ scales | Sense of coherence[4] | |
	Before deployment	After deployment
Irrelevant[2]	-0.25**	-0.32***
Benign-positive[2]	0.18*	0.25**
Challenge[2]	0.19*	-0.18
Threat, harm or loss[2]	-0.26**	-0.31***
Positive-negative balance[3]	0.31***	0.35***

[1]Scores could range from 1 (negative pole) to 9 (positive pole).

[2]Scores could range from 1 (lowest degree) to 4 (highest degree).

[3]Scores could range from -21 (maximum negative balance) to 21 (maximum positive balance).

[4]Scores could range from 13 (lowest sense of coherence) to 91 (highest sense of coherence).

* $p < .05$ ** $p < .01$ *** $p < .001$.

Beginning with personality (civilian out-clinic patient sample), Emotional Stability and Extraversion covary consistently with the ESRQ scales (although all correlations with Extraversion are below .20). High scores on the positive ESRQ scales correlate positively with these personality dimensions and high scores on the Threat, harm or loss scale correlate negatively. Agreeableness, Conscientiousness and Openness have no correlations with the ESRQ scales exceeding 0.10.

Turning to sense of coherence, a consistent pattern is obtained before and after deployment (military Marine task force sample). The positive ESRQ scales correlate positively with SOC and the negative scales correlate negatively.

3.2 Relationship with Secondary Appraisal

Table 3: Correlations between the ESRQ Scales and Secondary Appraisal

ESRQ scales	Secondary Appraisal index[1]					
	Civilian first responders What-is-this-phase ($n = 386$)	Civilian first responders Gain-control phase ($n = 386$)	Military task force Tchad ($n = 84$)	Military cadets episode 1 ($n = 112$)	Military cadets episode 2 ($n = 112$)	Military cadets episode 3 ($n = 112$)
Irrelevant[2]	0.03	-0.03	-0.06	-0.07	-0.20*	0.03
Benign-positive[2]	0.12*	0.15**	0.18	0.14	0.33***	0.17
Challenge[2]	0.10	0.19***	0.22	0.30**	0.22*	0.48***
Threat, harm or loss[2]	-0.09	-0.24***	-0.19	-0.12	-0.26**	-0.18
Positive-negative balance[3]	0.13*	0.26***	0.28*	0.25**	0.38***	0.32*

[1]Scores could range from 1 (lowest degree) to 5 (highest degree).

[2]Scores could range from 1 (lowest degree) to 4 (highest degree).

[3]Scores could range from -21 (maximum negative balance) to 21 (maximum positive balance).

* $p < .05$ ** $p < .01$ *** $p < .001$.

Table 3 notes an almost consistent pattern regarding the direction of the bivariate associations between the ESRQ scales and the secondary appraisal score. The positive ESRQ scales, and Challenge in particular, correlate positively with perceived coping options, while the negative scales, and especially Threat, harm or loss, correlate negatively. It should be noted that the correlations of the Positive - negative balance scale are statistically significant in all six measurements.

3.3 Relationship with Cognitive Emotion-Focused Coping

Table 4: Correlations between the ESRQ Scales and Cognitive Emotion-Focused Coping

Sample: Civilian first responders ($n = 386$)

ESRQ scales	Assessment I: "What-is-this-phase?"[1]			
	Positive self-talk vs fear	Positive self-talk vs anger	Negative self-talk vs fear	Negative self-talk vs anger
Irrelevant[2]	-0.10	-0.05	0.26***	0.25***
Benign-positive[2]	0.17***	0.23***	-0.13*	-0.15**
Challenge[2]	0.17***	0.20***	-0.34***	-0.29***
Threat, harm or loss[2]	0.09	0.08	0.38***	0.44***
Positive-negative balance[3]	0.08	0.11*	-0.44***	-0.46***

ESRQ scales	Assessment II: "Gain-control-phase"[1]			
	Positive self-talk vs fear	Positive self-talk vs anger	Negative self-talk vs fear	Negative self-talk vs anger
Irrelevant[2]	-0.01	0.02	0.19***	0.18***

Benign-positive[2]	0.06	0.06	-0.13*	-0.05
Challenge[2]	0.08	0.05	-0.29***	-0.26***
Threat, harm or loss[2]	0.15**	0.07	0.26***	0.25***
Positive-negative balance[3]	-0.03	0.00	-0.31***	-0.27***

[1]Scores could range from 1 (lowest degree) to 5 (highest degree).

[2]Scores could range from 1 (lowest degree) to 4 (highest degree).

[3]Scores could range from -21 (maximum negative balance) to 21 (maximum positive balance).

* $p < .05$ ** $p < .01$ *** $p < .001$.

Perusal of Table 4 points to three findings. First, the positive ESRQ scales correlate positively with the positive thinking scales and negatively with the negative thinking scales. Second, a reversed pattern on the negative ESRQ scales is not found. Thus, the Threat, harm or loss scale covaries positively with all cognitive emotion-focused coping scales, although the size of the association is weak on the positive thinking scales. The third finding is that the ESRQ scales show stronger associations with the negative thinking scales than the positive. In the former case, 19 out of 20 correlations are statistically significant. In the latter case, only 6 out of 20 reach this level.

3.4 Relationship with Outcome Variables

Three kinds of observations were collected which can be regarded as outcome variables: self-rated performance, self-rated health and moral stress reaction.

Table 5: Correlations between the ESRQ Scales and Performance

	Self-rated performance					
ESRQ scales	Civilian first responders What-is-this-phase[1] ($n = 386$)	Civilian first responders Gain-control phase[1] ($n = 386$)	Military task force Tchad[2] ($n = 84$)	Military cadets episode 1[2] ($n = 112$)	Military cadets episode 2[2] ($n = 112$)	Military cadets episode 3[2] ($n = 112$)
Irrelevant[3]	-0.02	0.00	-0.07	-0.35***	-0.34***	-0.23
Benign-positive[3]	0.20***	0.28***	0.09	0.24*	0.33***	0.30*
Challange[3]	0.18***	0.22***	0.32**	0.30***	0.39***	0.30*
Threat, harm or loss[3]	-0.01	-0.10	-0.13	-0.33***	-0.33***	-0.07
Positive-negative balance[4]	0.15**	0.24***	0.25*	0.43***	0.49***	0.29*

[1]Scores could range from 1 (worst performance) to 5 (best performance).

[2]Scores could range from 0 (worst performance) to 10 (best performance).

[3]Scores could range from 1 (lowest degree to) 4 (highest degree).

[4]Scores could range from -21 (maximum negative balance) to 21 (maximum positive balance).

* $p < .05$ ** $p < .01$ *** $p < .001$.

Regarding self-rated performance, the positive ESRQ scales and the Positive - negative balance scale consistently covary positively. The negative ESRQ scales show negative correlations with self-rated performance in the military cadet sample but not so in the group of civilian first responders.

Table 6: Correlations between the ESRQ Scales and Self-Rated Health and Moral Stress Reaction

ESRQ scales	Self-rated health[1] Civilian out-clinic patients ($n = 624$)	Moral stress reaction[2]		
		Military cadets episode 1 ($n = 112$)	Military cadets episode 2 ($n = 112$)	Military cadets episode 3 ($n = 112$)
Irrelevant[2]	-0.04	0.13	0.43***	0.01
Benign-positive[2]	0.47***	-0.41***	-0.41***	-0.36*
Challange[2]	0.48***	-0.26**	-0.40***	-0.40**
Threat, harm or loss[2]	-0.39***	0.65***	0.65***	0.54***
Positive-negative balance[3]	0.52***	-0.59***	-0.73***	-0.51***

[1]Scores could range from 1 (very bad) to 5 (very good).

[2]Scores could range from 1 (lowest degree) to 4 (highest degree).

[3]Scores could range from -21 (maximum negative balance) to 21 (maximum positive balance).

* $p < .05$ ** $p < .01$ *** $p < .001$.

The self-rated health scale (civilian out-clinic patient sample) and the moral stress reaction scale (military cadet sample) show a similar kind of relationship with the ESRQ scales. Thus, the positive ESRQ scales, and the Positive - negative balance scale, covary strongly with favorable ratings on self-reported health and with low reports of moral stress reactions. The Threat, harm or loss scale shows a reversed pattern.

4.0 DISCUSSION

The main result is that the observed correlations between the ESRQ and the other studied scales appear to be logical. Thus, the Benign-positive and Challenge scales correlate positively with favorable scores on Extraversion, Emotional Stability, sense of coherence, secondary appraisal, cognitive emotion-focused coping, self-rated performance, self-rated health and a low moral stress reaction. The opposite pattern was found for the scale designed to measure the primary appraisal Threat, harm or loss, and, to a lesser degree, the scale measuring the appraisal category Irrelevant.

I will now turn to a discussion of potential interpretations and implications. For two reasons, the focus will be on the results obtained with the Positive - negative balance scale. First, the results were most clear-cut with this scale. Second, the reliability coefficients for this scale were higher. A first observation is that the emotional reaction in a given situation almost always appears to be multi-faceted. In all studied situations, the participants reported a mixture of positive and negative emotions. A second observation is that the specific mixture in a given case, as captured by the Positive - negative balance scale, appears to have explanatory power. Although it is a cross-sectional study where no casual conclusions can be drawn, the consistent correlational outcome obtained with this simple scale, indicates that it captures something which may prove to be predictive.

This raises a number of questions. One possibility is that all questionnaire responses are influenced by a general factor such as positive and negative affectivity (Watson & Clark, 1984; Watson & Pennebaker, 1989), and that this can explain the self-report relationships. If objective indices, or external ratings, on performance had been available for instance, this hypothesis could have been tested.

Another possibility is that the ESRQ scales, and the Positive - negative balance scale in particular, captures the core of something which is more or less similar to what would have been the outcome had more ambitious assessment method been used. This "something" could be an indicator of an individual's psychological action potential in a given situation (Larsson, 1987). If this interpretation is valid, it should be noted that the predictive power of the Positive – negative balance scale could be assumed to depend on the degree to which the performance of a task requires resources in addition to psychological action potential such as physical ability and material assets.

An additional observation is that the dimensionality of the 14 items stood up reasonably well. Readers are referred to the health care context study for a detailed analysis of this (Larsson & Wilde Larsson, 2010). At the same time, the somewhat low Cronbach alpha coefficients for the Benign-positive scale in particular should be noted. This scale consists of three items only: relaxed, pleased and glad. Intuitively it seems reasonable to accept that these three emotions must not necessarily occur together. One can feel relaxed without being glad for instance. Anyhow, the results show that also for reliability reasons, the Positive - negative balance scale should be favoured.

In all nine instances where the ESRQ was used in the five samples studied, it was used retrospectively. Although it was just a question of minutes in the out-patient and military cadet samples, it cannot be ruled out that what is reported reflects some kind of generalised memory pattern. Therefore, additional studies where the How-do-you-feel-right-now-version of the ESRQ is used are desirable. This, of course, is associated with other methodological problems as it requires the respondent to stop doing his/her task for about one minute to fill in the questionnaire.

Other limitations of the present study include the following. Single-item measures were used to assess the Big Five personality dimensions, the secondary appraisal process, and the observables designed to measure performance and health. The diversity of the five samples and the kind of episodes studied is a weakness on the one hand. In particular, the civilian out-clinic patient sample deviates from the other groups. On the other hand, the consistency of correlational patterns across the samples and situations can be regarded as a strength of the ESRQ instrument. The strong male dominance among the civilian first responders and in the military samples also limits the generalizability of the results.

The final comment is on practical applicability of the ESRQ. It was repeatedly shown that the questionnaire can be completed by most participants in about 60 seconds. The data collection in the military cadet sample also demonstrated that it can be filled in outdoors in field conditions. It should also be noted that, after some practise, the scale scores, including the Positive - negative balance scale, can be manually computed very quickly. This can be valuable in small groups out in field conditions. Thus, to conclude, I think the results should be regarded as promising. More studies are obviously needed related to the above-mentioned limitations. However, if supported by further research, the ESRQ could be a theoretically and methodologically well founded instrument of value for researchers and practitioners in situations where more extensive assessment tools can not be used.

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APPENDIX A: The Emotional Stress Reaction Questionnaire

INSTRUCTION

Below is a list of words describing different emotions. Beside each word are four response choices. Circle the choice which best describes how you felt **right then.**

Respond as follows:

1	The word does not correspond to how you felt right then,
2	The word partly corresponds to how you felt right then
3	The word fairly well corresponds to how you felt right then
4	The word completely corresponds to how you felt right then

Respond with the alternative that first comes to your mind!

1.	Indifferent	1	2	3	4	8.	Energetic	1	2	3	4
2.	Relaxed	1	2	3	4	9.	Concerned	1	2	3	4
3.	Pleased	1	2	3	4	10.	Uncertain	1	2	3	4
4.	Glad	1	2	3	4	11.	Disappointed	1	2	3	4
5.	Alert	1	2	3	4	12.	Heated	1	2	3	4
6.	Focused	1	2	3	4	13.	Mad	1	2	3	4
7.	Concentrated	1	2	3	4	14.	Angry	1	2	3	4